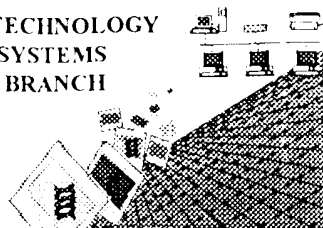


BIOTECHNOLOGY  
SYSTEMS  
BRANCH



1636  
#14

**RAW SEQUENCE LISTING**  
**ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/6/2,8694  
Source: 1650  
Date Processed by STIC: 11/20/2002

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THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

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FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: [patin21help@uspto.gov](mailto:patin21help@uspto.gov) or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: [patin3help@uspto.gov](mailto:patin3help@uspto.gov) or phone 703-306-4119 (R. Wax)

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<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

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Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. Hand Carry directly to:  
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7<sup>th</sup> Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202  
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Revised 01/29/2002



1600

## RAW SEQUENCE LISTING

DATE: 11/20/2002

PATENT APPLICATION: US/09/612,809A

TIME: 09:24:09

Input Set : A:\Iowa042.app

Output Set: N:\CRF4\11192002\I612809A.raw

1 <110> APPLICANT: SHEFFIELD, VAL C.  
 2 ALWARD, WALLACE L.M.  
 3 STONE, EDWIN M.  
 4 NISHIMURA, DARRYL  
 5 IATID, SHIVA  
 6 <120> TITLE OF INVENTION: THERAPEUTICS AND DIAGNOSTICS FOR CONGENITAL HEART  
 7 DISEASE BASED ON A NOVEL HUMAN TRANSCRIPTION FACTOR  
 8 <130> FILE REFERENCE: IOWA:042USP1  
 9 <140> CURRENT APPLICATION NUMBER: 09/612,809A  
 10 <141> CURRENT FILING DATE: 2000-07-10  
 11 <160> NUMBER OF SEQ ID NOS: 20  
 12 <170> SOFTWARE: PatentIn Ver. 2.1  
 13 <210> SEQ ID NO: 1  
 14 <211> LENGTH: 2264  
 15 <212> TYPE: DNA  
 16 <213> ORGANISM: Homo sapiens  
 17 <400> SEQUENCE: 1

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 22 cctgggttat tggccgacct cgcgggcagg tcagggcaga gtctcctgga agggcgcagg 120  
 23 agtggtggcg gaaggggggc tgcctgttct ttctttttgt ctgttttccc cggttttggc 180  
 24 ctggaagctg cgcggcgagt tccggcaagg cggctcggcg cggcgggggc cggcctttct 240  
 25 cctcgcagcg gaccccgctt cgcggcgcg cgggcaccca ggtagcccca ggagccggag 300  
 26 gagccagccc cagcgagcgc cgggagagcg ggcagcgcag ccggacgcac aggcgcagcg 360  
 27 gcgggcacca gtcgggcggg gccgggagtc ggaactggcg gccggcgggg cggggccggg 420  
 28 cccgagcgag ggtggggggg gccggggggg gggggcgggg ggcgagcggg ggccacacac 480  
 29 ctcaaaagcg aactaaatcg aaccccaag caggaaaagg taaaggaacc catcaaggca 540  
 30 aaatcgaaac taaaaaataa aaatccatt aaaaaaaacc cctgagaata ttaccacac 600  
 31 cagcgaaacg aatatccctc caaaaattca gctcaccagg accagcagca agaaaaactc 660  
 32 attttcttaa cggatttaatt cagagccacc tccacttgc ctgtgtctaa taacaaaaac 720  
 33 cgttaactgt ttatatacaga gacagcaaaa tcttggttta ttaaaggaca gtgttaactc 780  
 34 agataacacg taagtttctt ctgtgttttc agagacctgc ttccctctcc tccgtctctc 840  
 35 cctctcttgc ctctctctt gccctctacc tgttaagatat tattttctcc tatgttgaag 900  
 36 ggagggggaa agtcccggtt tatgaaagtc gctttctttt tatctatgga cctgttttaa 960  
 37 aatgtaaatt gaaacatagt aatttatatt taatttgtag ttggatgtcg tggaccaaac 1020  
 38 gccagaaagt gtcccaaaaa cctgacgcta aattgcctga aactttaaat tgtgtttttt 1080  
 39 ttctcattat aaaaagggaa actgtattaa tcttattteta tctcttttcc tttctttttt 1140  
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 45 tggagttggc atataaaaaa atacgttttc tcaactaatga cagtcacatga ttccggaatt 1500  
 46 ttaagcccat gaatcagcgg cggctctacc acggtgatgc ctgtgtggcg agagatggga 1560

Does Not Comply  
 with the Letter Needer

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/612,809A

DATE: 11/20/2002

TIME: 09:24:09

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Output Set : N:\CRF4\11192002\I612809A.raw

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53 ctgtgaggcc agatattgac agataaatat ttgggttggg tattccatat aaaattggag 1620
54 tgcataattat acatccctgt gagcagatg cgaatagat ttttccctat tatttcagtc 1680
55 ctttataaaa gaaaaaataa accagttttt aaatgtatct atataattct cccccaatta 1740
56 caatccctca tctattacat agaaggattg ctttttttaa aatatactgc gggttggaaa 1800
57 aggatattta atctttgaga aactatttta gaaaatatct ttgtagaaca attatttttg 1860
58 aaaaaatttt aaagcaataa caagaaagga ggcgaagaa ccagaaacatt ttggtctagg 1920
59 atggtttctt ttaaaacat ttttctctgt taattttag ttaaaactag gggacaatcc 1980
60 agattggccc cccccccttt gtaataaac caagaaatgt aataaatcca ttatcttagg 2040
61 gtgatctgc ctcgaatca gacttgggg aaatctggat ttgattacag acgttcgggg 2100
62 aggtgaggcc ctgcagttt gtttggaga taattcttt tctgctatc tgcgtctct 2160
63 atctagagga aacacttaag cagtattgc tcttcttt tgcctaaatt tgcctattgt 2220
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6 aaaa 2284

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6 &lt;210&gt; SEQ ID NO: 2

60 &lt;211&gt; LENGTH: 553

71 &lt;212&gt; TYPE: PRT

71 &lt;213&gt; ORGANISM: Homo sapiens

71 &lt;400&gt; SEQUENCE: 2

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71 Met Gln Ala Arg Tyr Ser Val Ser Ser Pro Asn Ser Leu Gly Val Val
72 1 5 10 15
73 Pro Tyr Leu Gly Gly Gln Gln Ser Tyr Tyr Arg Ala Ala Ala Ala Ala
74 20 25 30
75 Ala Gly Gly Gly Tyr Thr Ala Met Pro Ala Pro Met Ser Val Tyr Ser
76 35 40 45
77 His Pro Ala His Ala Gln Gln Tyr Pro Gly Gly Met Ala Arg Ala Tyr
78 50 55 60
79 Gly Pro Tyr Thr Pro Gln Pro Gln Pro Lys Asp Met Val Lys Pro Pro
80 65 70 75 80
81 Tyr Ser Tyr Ile Ala Leu Ile Thr Met Ala Ile Gln Asn Ala Pro Asp
82 85 90 95
83 Lys Lys Ile Thr Leu Asn Gly Ile Tyr Gln Phe Ile Met Asp Arg Phe
84 100 105 110
85 Pro Phe Tyr Arg Asp Asn Lys Gln Gly Trp Gln Asn Ser Ile Arg His
86 115 120 125
87 Asn Leu Ser Leu Asn Glu Cys Phe Val Lys Val Pro Arg Asp Asp Lys
88 130 135 140
89 Lys Pro Gly Lys Gly Ser Tyr Trp Thr Leu Asp Pro Asp Ser Tyr Asn
90 145 150 155 160
91 Met Phe Glu Asn Gly Ser Phe Leu Arg Arg Arg Arg Arg Phe Lys Lys
92 165 170 175
93 Lys Asp Ala Val Lys Asp Lys Glu Glu Lys Asp Arg Leu His Leu Lys
94 180 185 190
95 Glu Pro Pro Pro Pro Gly Arg Gln Pro Pro Pro Ala Pro Pro Glu Gln
96 195 200 205
97 Ala Asp Gly Asn Ala Pro Gly Pro Gln Pro Pro Pro Val Arg Ile Gln
98 210 215 220
99 Asp Ile Lys Thr Glu Asn Gly Thr Cys Pro Ser Pro Pro Gln Pro Leu
100 225 230 235 240
101 Ser Pro Ala Ala Ala Leu Gly Ser Gly Ser Ala Ala Ala Val Pro Lys

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## RAW SEQUENCE LISTING

DATE: 11/20/2002

PATENT APPLICATION: US/09/612,809A

TIME: 09:24:09

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Output Set: N:\CRF4\11192002\I612809A.raw

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123          260          265          270
125 Pro Pro Gly Ser Leu Pro Ser Ala Arg Pro Leu Ser Leu Asp Gly Ala
126          275          280          285
128 Asp Ser Ala Pro Pro Pro Pro Ala Pro Ser Ala Pro Pro Pro His His
129          290          295          300
131 Ser Gln Gly Phe Ser Val Asp Asn Ile Met Thr Ser Leu Arg Gly Ser
132 305          310          315          320
134 Pro Gln Ser Ala Ala Ala Glu Leu Ser Ser Gly Leu Leu Ala Ser Ala
135          325          330          335
137 Ala Ala Ser Ser Arg Ala Gly Ile Ala Pro Pro Leu Ala Leu Gly Ala
138          340          345          350
140 Tyr Ser Pro Gly Gln Ser Ser Leu Tyr Ser Ser Pro Cys Ser Gln Thr
141          355          360          365
143 Ser Ser Ala Gly Ser Ser Gly Gly Gly Gly Gly Gly Ala Gly Ala Ala
144          370          375          380
146 Gly Gly Ala Gly Gly Ala Gly Thr Tyr His Cys Asn Leu Gln Ala Met
147 385          390          395          400
149 Ser Leu Tyr Ala Ala Gly Glu Arg Gly Gly His Leu Gln Gly Ala Pro
150          405          410          415
152 Gly Gly Ala Gly Gly Ser Ala Val Asp Asn Pro Leu Pro Asp Tyr Ser
153          420          425          430
155 Leu Pro Pro Val Thr Ser Ser Ser Ser Ser Ser Leu Ser His Gly Gly
156          435          440          445
158 Gly Gly Gly Gly Gly Gly Gly Gly Gly Gln Glu Ala Gly His His Pro Ala
159          450          455          460
161 Ala His Gln Gly Arg Leu Thr Ser Trp Tyr Leu Asn Gln Ala Gly Gly
162 465          470          475          480
164 Asp Leu Gly His Leu Ala Ser Ala Ala Ala Ala Ala Ala Ala Gly
165          485          490          495
167 Tyr Pro Gly Gln Gln Gln Asn Phe His Ser Val Arg Glu Met Phe Glu
168          500          505          510
170 Ser Gln Arg Ile Gly Leu Asn Asn Ser Pro Val Asn Gly Asn Ser Ser
171          515          520          525
173 Cys Gln Met Ala Phe Pro Ser Ser Gln Ser Leu Tyr Arg Thr Ser Gly
174          530          535          540
176 Ala Phe Val Tyr Asp Cys Ser Lys Phe
177 545          550

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180 &lt;210&gt; SEQ ID NO: 3

181 &lt;211&gt; LENGTH: 1662

182 &lt;212&gt; TYPE: DNA

183 &lt;213&gt; ORGANISM: Homo sapiens

185 &lt;400&gt; SEQUENCE: 3

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187 gccagagaga gctactccg gccgcccc gccgcccc gccgcccc gccgcccc 120
188 ccgccccca tgagccgta ctgcacccct cccaccccc agcactacc ggagcccatg 180
189 gcccgccct acggcccta cagcccgag cccgcccc agaatatgat gagcccgccc 240
190 tatagctaca tccgctcat caccatgccc atccagaaa ccccgacaa gaagatccc 300

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## RAW SEQUENCE LISTING

DATE: 11/20/2002

PATENT APPLICATION: US/09/612,809A

TIME: 09:34:09

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Output Set: N:\CRF4\11192002\I612809A.raw

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192 ggctggcaga acagcatcgg ccacaaactc tccctcagg aatgcttcgt caaggqggcg 420
193 cggcagcaga aagaagccggg caaggcagc tactgaagg tggaccggga ctctacaaac 480
194 atgttcgata aaggcagctt cctggggggg cgggggggtt tcaagaagaa ggaagcgggtg 540
195 aaggacaaag aggaagaagg caggctgcac ctcaaggag cggcccccct cggcccccag 600
196 ccccccctcg cggcggcgga gcaggccac gcaaggcgg cgggtccga gggcgcgcc 660
197 gtgcacatc aggaratcaa gacggagac gataatggt cctcgccgg ccagcccttg 720
198 tccgggggg cggccctggg caggggcag cggggggcg tgcraagat cgaagacccc 780
199 gacacagaa gtagcagcct ctccagcgg aacacccc cgggagcct gcgttcggcg 840
200 cggcgctta cgttggagg tgggattc ggggggac cggcccgcg ctccgcccgg 900
201 cggcgccac atagccagg ctccagctg caaacatca tgaactcgt gggggggtcg 960
202 cggcagagg cggcgcgga gctcagctc gacttctgg cctcgccgg cgggtctctg 1020
203 cggcgggga tggacccc gctggcgct cgggctact cggcgggca gactcctc 1080
204 tacagctcc ctggagcca gactccacg gacacacct cggcggggg cggcggggg 1140
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208 tggctctcc tgaatcagg cggggggg cggggggg ggggaggg cgaagccggc 1380
209 taccacccg cggccacca agggcgctc acctcgtgt acctgaacca gggcgggga 1440
210 gactcgggc acttgggaag cggcgcgcg cggcgcgcg ccgaggeta cccgggcag 1500
211 cagcagaat tccactcgt ggggagatg ttgagtcac agaggatcgg cttagaacaac 1560
212 tctcagtcg aggggaatg tagctgtaa atgctctc ctccagcca gtctctgtac 1620
213 ggcagtcg gacttctgt ctacagctgt agaaagtgt ga 1662

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216 &lt;210&gt; SEQ ID NO: 4

217 &lt;211&gt; LENGTH: 106

218 &lt;212&gt; TYPE: PRT

219 &lt;213&gt; ORGANISM: Artificial Sequence

220 &lt;220&gt; FEATURE:

221 &lt;223&gt; OTHER INFORMATION: Description of Artificial Sequence: Synthetic

222 Peptide

223 &lt;400&gt; SEQUENCE: 4

224 Pro Lys Asp Met Val Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Thr

225 1 5 10 15

226 Met Ala Ile Gln Asn Ala Pro Asp Lys Lys Ile Thr Leu Asn Gly Ile

227 20 25 30

228 Tyr Gln Phe Ile Met Asp Arg Phe Pro Phe Tyr Arg Asp Asn Lys Gln

229 35 40 45

230 Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu Cys Phe

231 50 55 60

232 Val Lys Val Pro Arg Asp Asp Lys Lys Pro Gly Lys Gly Ser Tyr Trp

233 65 70 75 80

234 Thr Leu Asp Pro Asp Ser Tyr Asn Met Phe Glu Asn Gly Ser Phe Leu

235 85 90 95

236 Arg Arg Arg Arg Arg Phe Lys Lys Lys Asp

237 100 105

238 &lt;410&gt; SEQ ID NO: 5

239 &lt;411&gt; LENGTH: 106

240 &lt;412&gt; TYPE: PRT

241 &lt;413&gt; ORGANISM: Artificial Sequence

## RAW SEQUENCE LISTING

DATE: 11/20/2002

PATENT APPLICATION: US/09/612,809A

TIME: 09:24:09

Input Set : A:\Iowa042.app

Output Set: N:\CRF4\11192002\I612809A.raw

253 &lt;120&gt; FEATURE:

254 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
255 Peptide

256 &lt;400&gt; SEQUENCE: 5

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258 1 5 10 15

261 Met Ala Ile Gln Asn Ala Pro Gln Lys Lys Ile Thr Leu Asn Gly Ile

262 20 25 30

264 Tyr Gln Ile Ile Met Asp Arg Phe Phe Tyr Arg Glu Asn Lys Gln

265 35 40 45

267 Lys Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu Cys Phe

268 50 55 60

271 Val Lys Val Pro Arg Asp Asp Lys Lys Pro Gly Lys Gly Ser Tyr Trp

272 65 70 75 80

274 Thr Leu Asp Pro Asp Ser Tyr Asn Met Phe Glu Asn Gly Ser Phe Leu

275 85 90 95

276 Arg Arg Arg Arg Arg Phe Lys Lys Lys Asp

277 100 105

280 &lt;10&gt; SEQ ID NO: 6

281 &lt;11&gt; LENGTH: 106

282 &lt;12&gt; TYPE: PRT

283 &lt;13&gt; ORGANISM: Artificial Sequence

284 &lt;20&gt; FEATURE:

285 &lt;23&gt; OTHER INFORMATION: Description of Artificial Sequence: Synthetic

286 Peptide

287 &lt;400&gt; SEQUENCE: 6

288 Thr Thr Glu Pro Thr Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile Ala

289 1 5 10 15

293 Met Ala Ile Gln Ser Ser Pro Gly Gln Arg Ala Thr Leu Ser Gly Ile

294 20 25 30

296 Tyr Arg Val Ile Met Gly Arg Phe Ala Phe Tyr Arg His Asn Arg Pro

297 35 40 45

299 Lys Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu Cys Phe

300 50 55 60

304 Val Lys Val Pro Arg Asp Asp Arg Lys Pro Gly Lys Gly Ser Tyr Trp

305 65 70 75 80

308 Thr Leu Asp Pro Asp Cys His Asp Met Phe Glu His Gly Ser Phe Leu

309 85 90 95

310 Arg Arg Arg Arg Arg Phe Thr Arg Gln Thr

311 100 105

312 &lt;10&gt; SEQ ID NO: 7

313 &lt;11&gt; LENGTH: 106

314 &lt;12&gt; TYPE: PRT

315 &lt;13&gt; ORGANISM: Artificial Sequence

316 &lt;20&gt; FEATURE:

317 &lt;23&gt; OTHER INFORMATION: Description of Artificial Sequence: Synthetic

318 Peptide

321 &lt;400&gt; SEQUENCE: 7

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<210> SEQ ID NO 16

<211> LENGTH: 106

<212> TYPE: PRT

<213> ORGANISM: Artificial Sequence

<220> FEATURE:

<223> OTHER INFORMATION: :

<400> SEQUENCE: 16

*see p. 7 for description*

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/612,809A

7  
DATE: 11/20/2002  
TIME: 09:24:10

Input Set : A:\Iowa042.app  
Output Set: N:\CRF4\11192002\I612809A.raw

Use of <220> Feature(NEW RULES):

Sequence(s) \_\_ are missing the <220> Feature and associated headings.

Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or "Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp.29631-32) (Sec.1.823 of new Rules)

Msg#:16



.. VERIFICATION SUMMARY

DATE: 11/20/2002

PATENT APPLICATION: US/09/612,809A

TIME: 09:24:10

Input Set : A:\Iowa042.app

Output Set: N:\CRF4\11192002\I612809A.raw

1:000 M:258 W: Mandatory Feature missing, <130> Tag not found for SEQ#:16, <213>  
ORGANISM:Artificial Sequence

1:000 M:258 W: Mandatory Feature missing, <223> Tag not found for SEQ#:16, <213>  
ORGANISM:Artificial Sequence

1:000 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:16, Line#:605